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2008 - A YEAR OF THREE ANNIVERSARIES:

125th Anniversary of the Club for Natural Sciences in Fiume (Rijeka),160th Anniversary of the Birth and80th Anniversary of the Death Of Professor Peter Salcher

2008. – GODINA TRIJU OBLJETNICA:

125 godina od osnivanja Kluba za prirodne znanosti u Rijeci,

160 godina od rođenja i

80 godina od smrti prof. Petera Salchera

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SUMMARY

The Natural Science Club was founded in Fiume/Rijeka (Naturwissenschaftlichen Club in Fiume/Club di scienze naturali in Fiume) on November 28th 1883. The foundation charter stipulated no restriction on language use, and lectures could be held in any language. Right from the start, the Club had active women members, and one of them, Rosa Fatour, the headmistress of the municipal school, held a lecture entitled "Development of anthropology" as early as in 1889. The Club started to publish a bilingual bulletin in German and Italian in 1896 (Mittheilungen des Naturwissenschaftlichen Clubs in Fiume/Bolletino del Club di scienze naturali in Fiume), bringing not only reports on lectures held in the Club, but also important scientific and professional papers. In 1896, several sections were founded within the Club, as follows: 1. The Committee for Röntgen, whose aim was to purchase the Röntgen apparatus. This task was completed in 1897. The apparatus was ceded to the municipal hospital in 1899, and the Committee was disbanded. 2. The Photography Section, lead initially by A. Riegler. The section organized several photo exhibitions in which women often took part. 3. The Prehistoric Research Section was founded subsequent to the discovery of the remains of an old fortification in the town. This section collaborated closely with the municipal museum.

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Since founding and until 1902, Prof Peter Salcher held important positions in the Club; he founded the Röntgen Committee and the Photography Section; he himself gave 31 lectures and was editor of the German part of the Bulletin.

Key words: Natural science history, 19th century, Club for Natural Sciences in Fiume (Rijeka), Peter Salcher

INTRODUCTION

Following the 1968 Croatian-Hungarian Agreement, the town of Fiume (nowadays Rijeka) became a separated political entity (*corpus separatum*) ruled by the Governor nominated by the Hungarian prime minister and appointed by the King. The municipal administration was headed by the elected Mayor (*Podestà*), whose nomination had to be confirmed by the King. The Town Hall (*Magistrato Civico*) held the executive powers, but was controlled by the Governor. Education, jurisdiction, and public services were subject to the central government in Budapest. These political circumstances boosted the town's development. At some point, Fiume (Rijeka) was among the most prosperous places in the world with the tenth largest harbour in Europe and many public buildings and services such as, new theatre building, municipal market, a number of school buildings, water supply and sewage water system. At the same time, many civil associations were founded, including the Club for Natural Sciences in Fiume (Rijeka) (*Naturwissenschaftlichen Club in Fiume/Club di scienze naturali in Fiume*) [1]. An article by baron Giogrio Vranyczany in the first issue of the Club's *Bulletin* describes what brought to it: "... rapid development of natural sciences encouraged several intellectuals of Fiume (Rijeka) to establish an association whose role would be to disseminate the accomplishments of natural sciences to the educated public with mutual benefit [2].

CLUB FOUNDATION

The decision to found the Club was made at the Founding Committee meeting on 13 October 1883. The Committee consisted of Karl Ritt von Bermann, Coastal line lieutenant (*Linienshiffs-Lieutenant*), Dr Bela Erody, Grammar school headmaster, Anton von Hajnal, civil engineering inspector, Guido Edl von Poosch, frigate captain, and Dr Peter Salcher, professor at the I&R Naval Academy. The Committee made a foundation charter draft and had to gather at least 80 membership applications to constitute the Club. With 107 applications gathered, the constitutional meeting was held at Hotel Deak on 28 November 1883 [2].



Male elementary school building (Scuola cittadina maschile)
which hosted the Society's lectures, around 1910.

*Zgrada Osnovne škole za dječake (Scuola cittadina maschile) oko 1910.,
u kojoj su se održavala predavanja Društva.*

According to the foundation charter [3], the aim of the Club was “..to spread scientific knowledge, particularly in natural sciences” (Article 1) through lectures, discussions, and access to scientific journals (Article 2). Interestingly, the charter stipulated that the lecture could be held in any language (Article 23). A new member could join the Club upon recommendation of an existing member (Article 5) confirmed by at least 5 of the 9 members of the Steering Committee (*Ausschuss*) (Article 18). The Committee members were elected at the annual general assembly, and they among themselves elected the president, vice-president, secretary, and cashier (Article 19). Club entrance fee for regular members was 2 forints, while for the founders 50 forints. The annual fee of 6 fl was paid in advance in two instalments. The members could assist at conferences, give proposals for future work, recommend new members, use the Club library, host Club guests, and vote (Article 28). It would take two-thirds of all members to amend the Club charter or dissolve the Club (Article 28). In case of dissolution, the material goods were to go to a club of similar activity or to charity (Article 29).

Dr Josef Luksch, professor at the Naval Academy, was elected the first president of the Club, while Giorgio Vranyczany and Dr Peter Salcher were elected the vice- president and secretary, respectively. The two turned out to be crucial for the Club functioning in the first two decades of its activity. Club members were professors, physicians, industrialists, traders, and diplomats. The Governor of Fiume (Rijeka), Ludwig Batthany also joined the Club in 1893.

Among active members there were several Austro-Hungarian noblewomen: Gisella von Ghyczy, Sabine von Horhy, Christine von Troyer, but also a teacher Josefina Brum and the headmistress of the local girl school Rosa Fatour. On 8 February 1889, she held a lecture entitled: "Development of Anthropology" [2]. According to the report published in the daily newspaper *La Bilancia* [4], the lecture was a success, and gave an insight into different approaches to anthropology: from anti-evolutionarist Couvier to Charles Darwin whose theory she supported. Women were also quite successful in the Clubs Photography Section.

BULLETIN OF THE CLUB FOR NATURAL SCIENCES IN FIUME (RIJEKA)

In 1896 the first issue of the Club's bilingual bulletin *Mittheilungen des Naturwissenschaftlichen Clubs in Fiume / Bolletino del Club di scienze naturali in Fiume (Bulletin)* was published whose aim was to get in contact with other similar associations. These associations would receive a copy of the *Bulletin* and an invitation for future

collaboration. In the first year of the *Bulletin* such collaboration was established with associations in Brunn (Brno), Linz, Prag, Reichenberg (Liberec), Sarajevo, Trieste, and Vienna [2], and by the last *Bulletin* issue in 1904, this number rose to 28 associations [5].

Beside reporting on lectures held at the Club, the *Bulletin* published professional and scientific papers. Some are still relevant, especially Professor Josef Koettstorfer's "Report on the Chemical and Biological Analyses of Water from the Spring of Zvir and Other Public Wells in Rijeka" written originally in 1888 but published later in the *Bulletin* [2]. This report served as a starting point for building-up the municipal water supply system that operated from 1894 to 1999. The results of chemical analyses are still comparable with those obtained nowadays by ion chromatography. Other papers of interest include "Vegetation in the Kvarner Bay" [2] and "Vertebrates and Other Marine Organisms in the Kvarner Bay" [6] by

Professor J. Matisz; "Survey of the Insects in the Fiume (Rijeka) Surroundings" by M. Padewieth [7]; "On Lichens in the Rijeka Area" by Dr J. Schuler, and "Report on Dust Deposited with the Rain on 10-11 March 1901" by Milutin Barač [8].

1896 was the crucial year for the Club, as it saw the founding of two sections and the Röntgen committee.

THE RÖNTGEN COMMITTEE

Subsequent to the first lecture on X-rays given in the Club by Professor Salcher on 20 February 1896, a Committee was formed to procure an apparatus for the Club. It consisted of Professor Salcher, Milan Gorup, and baron Vranyczany. During the lecture Professor Salcher took two Röntgen photographs using a provisional set-up he constructed himself [2]. The 45 Club members collected 445 forints for the new Röntgen apparatus; the municipality gave 300 forint; and the municipal hospital provided another 200 forints. In the spring of 1897 the apparatus was set-up at the Club and served for medical diagnoses. The following year the Committee decided to cede the apparatus to the municipal hospital for an annual fee of 50 forints and professional assistance to operate with the apparatus. However, the instrument was first to be adapted for alternative current from the municipal power supply, and was therefore sent to the factory in Chemnitz. By the end of 1898 the apparatus was set-up at the municipal hospital, with Dr Isidoro Garofolo in charge. In a way, he was the first radiologist in Fiume (Rijeka). The Röntgen Committee was then disbanded [7], but the Committee members occasionally check-up its function, according to the contract between the Club and the hospital, until 1903.

PHOTOGRAPHY SECTION

By the end of 1896, Sandor (Alessandro) Riegler, headmaster of the Hungarian Trade Academy, and Milan Gorup, industrialist, were in charge of establishing the Club's photography section. First there was an exhibition opened from the New Year's Eve of 1896 to 6 January 1897, and bringing 400 photographs by 20 photography amateurs. The section was established on 7 January 1897, with Sandor Riegler elected the first chair. The section organized lectures with slide projections and exhibitions of retouched photos using ink and/or paint. The subsequent exhibitions took place on Easter 1899, 1900, 1902, 1904, and 1907. The themes included street life, sea shore, sunset, snow-topped mountains, individual and fam-

ily portraits. The royal nobilities, archdukes Josef and Ferdinand from Tuscany with his wife archduchess Marie-Louise also took part in the exhibitions organized in 1899 and 1890. The first colour photographs were displayed as soon as the 1907 exhibition. Women were quite successful exhibitors. Professor Salcher too was a distinguished photographer; some of his photographs are still used in printed media (Figure 2). He also wrote a kind of a textbook for photography amateurs *Die Wasser-Spiegelbilder* (translates to Reflections on Water Surface, Halle, a. S, 1903).

PREHISTORIC RESEARCH SECTION

As Mr A. Belar, assistant at the I&R Marine Academy, discovered citadel ruins at Veli Vrh above Drenova, the municipal museum of Fiume (Rijeka) continued the excavations that gave similar results. Mr. Belar recommended that Professor A. Müller, curator of the State Museum of Ljubljana and an expert in citadel investigation, published the findings in a professional journal *Argo*. Professor Müller visited the location and revised the findings. On 7 Novber 1895 he held a lecture on the role of Fiume (Rijeka) as a trade and military centre in the Antiquity and Middle Ages (2). On 3 January 1896, followed a lecture on "The oldest cultural and trade connection of the region and methods of prehistoric investigation". Due to a great interest expressed by the audience and future plans, the Steering Committee agreed to include prehistoric research of the town area in the Club's activities. It acknowledged the assistance of and agreed to cede all found artefacts to the municipal museum [7]. In collaboration with the museum's experts, the newly established section continued the research in the wider city area, where prehistoric artefacts were found. Dr Marchesetti, the head of the Triest museum examined and classified the objects for the municipal museum of Fiume (Rijeka) [7]. In 1900, the section financed an investigation of the ancient remains in the Kozala area [8].

PROFESSOR PETER SALCHER

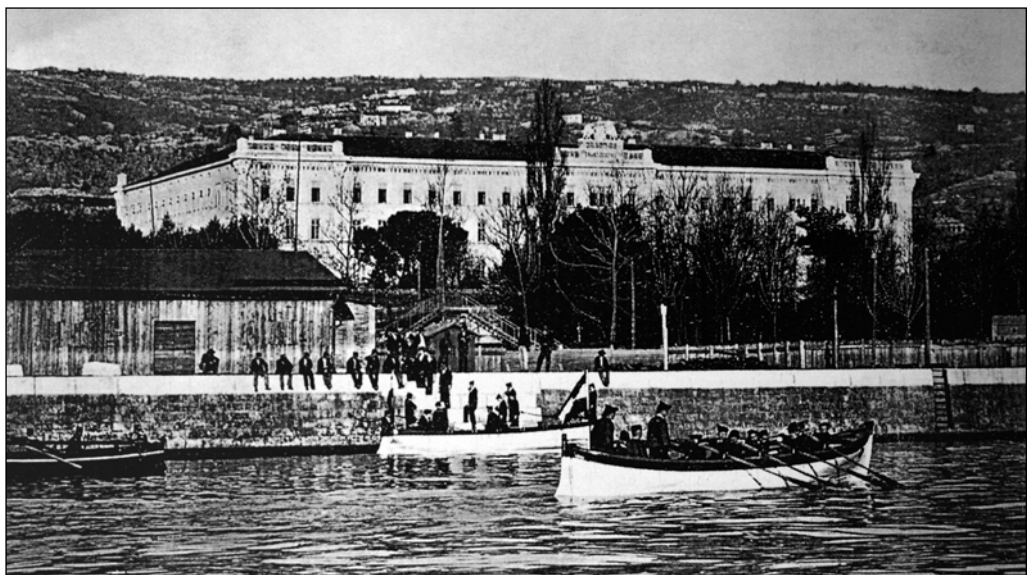
The pioneering role of Prof. Peter Salcher in the field of scientific photography is well documented [9,10,11]. Less is known about his role and activity in the Club for natural Sciences in Fiume (Rijeka) [12]. Ever since the founding initiative and until 1902, Professor Peter Salcher held important positions in the Club. He was the Club's secretary from foundation in 1883 to 1887. From 1888 to 1893, he was the vice-president, and from 1894 to 1897 the president. Between 1898 and 1902 he was the member of the Steering Committee [12].



Prof. Peter Salcher (1848–1928)

Professor Peter Salcher was born in Kreuzin-Ebene, close to Peternion in Kaernten (Austria) on 10 August 1848. He graduated from the Faculty of Philosophy in Graz (Austria) *cum laude* and took his PhD degree there. He first taught mathematics and physics at the State High School in Triest. In 1875, he was appointed professor of physics and mechanics at the I. & R. Naval Academy in Fiume (Rijeka). He held this position for 35 years, until retirement in 1909. He was the head of the Physics Laboratory and he performed meteorological observations. He authored and coauthored three textbooks on physics. His most important papers were in the field of scientific photography. From 1910 to 1914 he lived in Trieste, and later returned to Sušak (Rijeka), where he spent the rest of his life. He died on 4 October, 1928 [9].

Professor Salcher alone gave 31 lectures at the Club, covering 24 topics, mostly in physics and engineering, but also in art, ethics, pedagogy, and health care, the latter reviewed earlier in this journal [13]. Reports on these lectures, either in the *Bulletin* or in the local daily paper *La Bilancia* gave insight into his points of view regarding not only science, but society



Student training on boats in front of the Royal and Imperial Navy Academy.
Photograph by professor Peter Salcher taken in 1900.

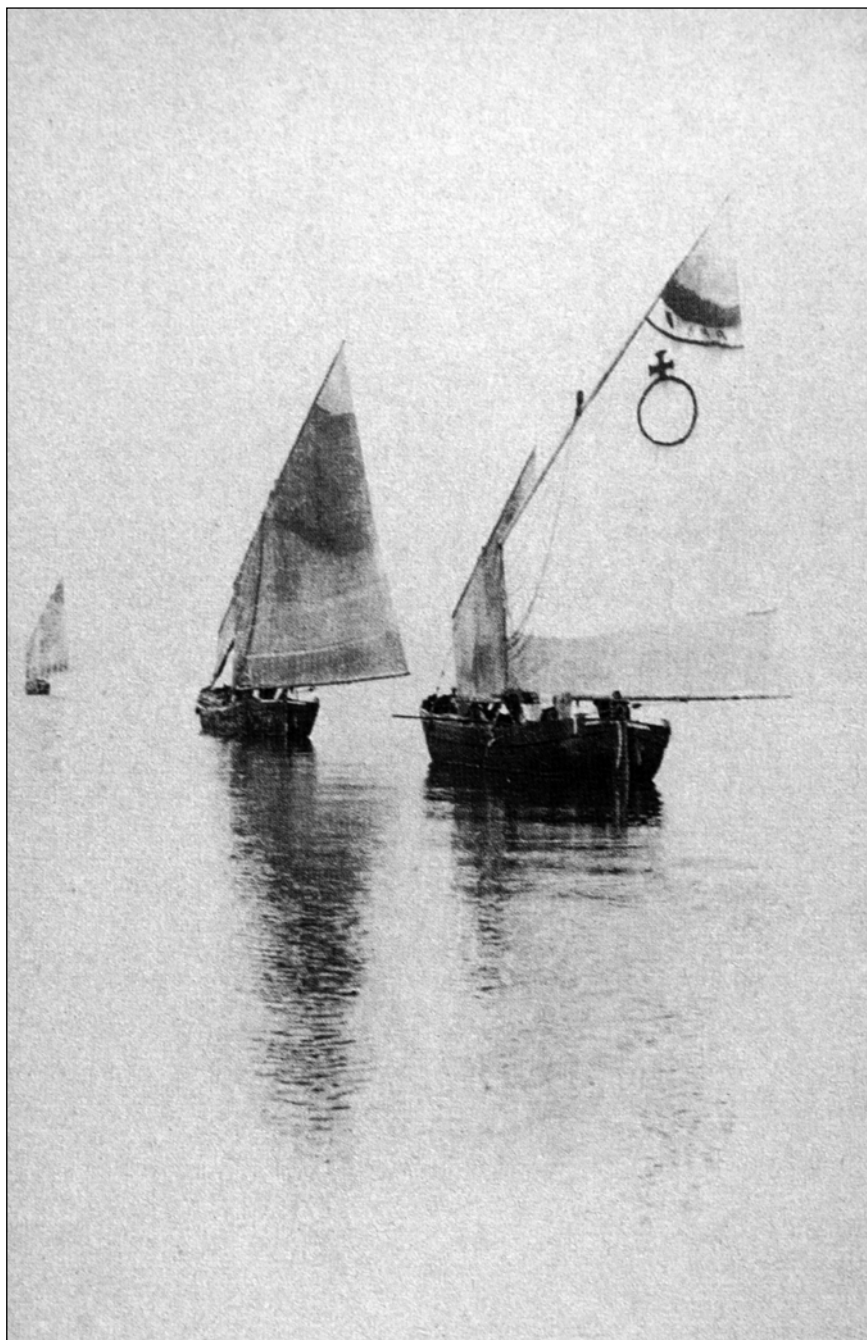
Studenti na vjezbama u čamcima pred K&K Mornaričkom akademijom na fotografiji profesora Petra Salchera 1900.

as well, thus providing evidence on his strong personality [12], indicated earlier only from the family pictures [10]. Four of his lectures stand out because of exceptional theoretical or experimental merit:

“Taking photographs of fast movements” (*Das Photographieren rapider Bewegungen*) from 1886 [2] brings photographs of flying bullets taken with the help of professor S. Riegler on Prof. Ernst Mach’s request. This is a well known work that Mach and Salcher published in the *Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften* (*Proceedings of the Viennese Academy of Science*) from 1887 [14]. This is his masterpiece and a milestone in the history of physics and photography;

“On the connection between light and electricity” (*Über den Zusammenhang zwischen Licht und Elektrizität*) from 1894 [2] explains (though not entirely correctly) that light and electricity are one and the same (...*dass die Elektrizität dem Lichte gleich /ist/ auf Ätherschwingungen beruhe*), which will be elaborated in 1924 by Louis de Brogli;

“The Röntgen rays” lectures given in 1896 and 1897. The first was given in less than a month [2] from the famous Röntgen’s lecture to the



Peter Salcher: Photography of a procession from 1910.

Peter Salcher: Povorka, fotografija, 1910.

Physical Medical Society in Würzburg (23 January 1896). Salcher, at the end of his lecture, took the first Röntgen photographs of the baroness Vranyczany's palm and of metal objects closed in a box using his own provisional apparatus. The photographs were developed by Professor S. Brattanich [15]. Because of the huge interest, the lecture was repeated in Italian by Professor Giovanni Slocovich the following week.

The second lecture on the same subject was held on 23 June 1897, after the first Röntgen apparatus had been purchased. Mr Milan Gorup assisted during the demonstration. In those days, when the nature of X-rays was still unknown, Professor Salcher pointed out the following: “*we cannot claim that (X-rays) are electrical waves, for as such they should reflect and refract. Perhaps X-rays are a kind of light with a much higher oscillation than the usual light*” [16]. Only in 1912 did Max von Laue describe the nature of X-rays.

Salcher's last lecture given on 12 Jan 1901 and entitled “Scientific and technical progress over the last century” (*Naturwissenschaftlich-technische Betrachtungen über das letzte Jahrhundert*) reviews the progress in physics and “*spectral analysis, that represents revolution in study of chemistry, and is indispensable in quantitative analysis*”. He also pointed out “*.. the theory of electricity underwent such a development since the beginning of XIX century but there would be hardly found another way of its production than by induction*” [8]. More than a century later, his predictions on induction as being the only way of electricity production is still valid.

His last paper of 1909 [17] deals with the radioactivity of seawater in the Rijeka Bay area (*Die Radioaktivität des Meerwassers in Golfe von Fiume und Umgebung*), which is a pioneering work in the field. At the time, radioactivity was considered beneficial and was used for therapy in health resorts. Salcher recorded radioactivity in various parts of the Rijeka Bay and pointed to its anthropogenic sources. He concluded that it was necessary to reconsider carefully and clarify the therapeutic use of radioactivity (emanates). This is yet another example of his sharp wits.

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SAŽETAK

Na poticaj intelektualnih krugova, Klub za prirodne znanosti u Rijeci (*Naturwissenschaftlichen Club in Fiume/Club di scienze naturali in Fiume*) osnovan je 28. studenoga 1883. nakon odobrenja Statuta. Kao zanimljivost Statuta može se navesti da su se predavanja mogla održavati na bilo kojem jeziku (Čl. 23). Među aktivnim članovima Kluba bilo je i nekoliko žena, a Rosa Fatour, ravnateljica građanske škole, već je 1889. održala predavanje "Osvrt na razvoj antropologije". Od 1896. započelo se s izdavanjem Priopćenja Kluba za prirodne znanosti, dvojezičnoga njemačko-talijanskog izdanja u kojem su se uz izvješća s predavanja, publicirali i značajniji znanstveni i stručni radovi. Unutar Kluba djelovalo je i nekoliko sekcija: 1. Komitet za Röntgen, osnovan 1896. s ciljem nabave rendgenskog aparata, što je i ostvareno 1897. Predajom aparata gradskoj bolnici 1899., rad je tog komiteta završen; 2. Fotografska sekcija osnovana je krajem 1896., a prvi predsjednik bio je A. Riegler. Ova je sekcija povremeno organizirala izložbe fotografija na kojima su i žene bile aktivne sudionice; 3. Sekcija za prethistorijska istraživanja osnovana je 1896., nakon otkrića ostataka kaštelira na području Velog Vrh na Drenovi. Usko je surađivala s Gradskim muzejom. Od same ideje o osnivanju do 1902., prof. Salcher obnašao je sve dužnosti u Klubu, bio je urednik njemačkog dijela Priopćenja, sam je održao 31 predavanje, a bio je aktivan u Komitetu za Röntgen i u Fotografskoj sekciji. Aktivnost Kluba nedjeljiva je od rada prof. Salchera, čiju obljetnicu rođenja i smrti obilježavamo.

Ključne riječi: povijest prirodnih znanosti, XIX. stoljeće, Klub prirodnih znanosti, Rijeka, Peter Salcher